

Digital Mucous Cyst

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Abstract

Digital mucous cysts are benign, cystic lesions of the digits typically located near the distal interphalangeal joints or near the proximal nail folds. The peak incidence rates are in the age group between 40 and 70 years. The male to female ratio is 2:1. Two types of digital mucous cysts have been described. The myxomatous (superficial) type presumably arises de novo from the metabolic derangement of dermal fibroblasts that leads to excess production of hyaluronic acid. The ganglionic (deep) type results from leakage of fluid from the distal interphalangeal joint. There may be coexisting osteoarthritis and osteophytes in the joint. Characteristically, a digital mucous cyst presents as an asymptomatic, slow-growing, solitary, circumscribed, semi-translucent, flesh colored, compressible, dome-shaped, cystic papulonodule measuring 1 to 10 mm in diameter on the finger. A watchful observation may be appropriate for asymptomatic patients. For symptomatic patients and those patients who prefer treatment, simple surgical excision of the cyst is the treatment of choice. Other treatment options include incision and drainage, repeated needling to induce scarification, cryotherapy, sclerotherapy, intralesional injections of corticosteroids or sclerosing agents, electrodesiccation, and carbon dioxide laser therapy.

Keywords: Myxomatous; Ganglionic; Osteoarthritis; Papulonodule; Digit

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Digital mucous cysts (also known as digital myxoid cysts) are benign, cystic lesions of the digits typically located near the distal interphalangeal joints or near the proximal nail folds [1, 2]. The terms "mucous" and "myxoid" refer to the jelly-like contents. The condition was first described by Hyde in 1883 [3].

Epidemiology

The prevalence is not known. The peak incidence rates are in the age group between 40 and 70 years, yet the condition may be seen as early as the teenage years.⁴ The male to female ratio is 2:1 [4, 5].

Etiopathogenesis

Two types of digital mucous cysts have been described. The myxomatous (superficial) type presumably arises de novo from the metabolic derangement of dermal fibroblasts that leads to excess production of hyaluronic acid [1, 4-6]. The resulting accumulation of hyaluronic acid pushes the collagen of the dermis apart, forming a pseudocyst. This type of cyst typically involves the proximal nail fold [6]. The ganglionic (deep) type results from leakage of fluid from the distal

interphalangeal joint [1, 4]. A stalk that tracks down to the joint can often be demonstrated. There may be coexisting osteoarthritis and osteophytes in the joint. Typically, this type of cyst is located near the distal interphalangeal joint and is analogous to a ganglion [2]. Trauma may be a causative factor in a small minority of cases, especially in those younger than 40 years of age [1, 2, 6].

Histopathology

Histologically, the two types of digital mucous cysts do not have an epithelial lining and therefore, in a strict sense, are pseudocysts [2]. In the myxomatous type, there is an ill-defined area of mucinous material containing spindled to stellate fibroblasts within the superficial dermis. In the ganglionic type, the dermal cavity is surrounded by compressed collagen forming a pseudocapsule. In either type, the cyst contains a thick, gelatinous fluid that may be clear or yellow-tinged and stains positively for hyaluronic acid.

Clinical Manifestations

Characteristically, a digital mucous cyst presents as a slow-growing, solitary, circumscribed, semi-translucent, flesh-colored, compressible, dome-shaped, cystic papulonodule measuring 1 to 10 mm in diameter on the finger and occasionally the toe (Figure 1) [1, 2, 4]. The thumb, index finger, and middle finger of the dominant hand are more commonly affected [1, 7, 6]. Multiple lesions are uncommon [7]. The cyst typically is located to one side of the midline on the dorsal aspect of the digit between the distal interphalangeal joint and the proximal nail fold, and is more common on the radial than the ulnar aspect of the finger [8]. Less commonly, lesions are found between the proximal nail fold and the nail plate, beneath the nail matrix, or in the digital pulp [5, 8, 9]. When the cyst is under the nail matrix, a red lunula and a longitudinal brownish band may be seen. Longitudinal grooving or depression of the nail may occur if the nail matrix is involved [9].

The condition is usually asymptomatic but may be accompanied by discomfort/ pain and decreased range of

motion, especially if there is an underlying osteoarthritis. The cyst may rupture spontaneously or when compressed to produce a mucinous/gelatinous fluid that may be clear or yellow-tinged.



Figure 1: Digital mucous cyst on the dorsum of the right index finger between the distal interphalangeal joint and the proximal nail fold.

Diagnosis

The diagnosis is usually clinical, based on its distinctive clinical features. Dermoscopy of the lesion reveals a flesh-colored lesion with linear branched and serpentine vessels when no pressure is applied [2]. When pressure is applied, the vascular pattern becomes less prominent and the lesion becomes translucent with bright white areas [2]. The bright white structures are characteristic of lesions with increased collagen.

Differential Diagnosis

Differential diagnosis includes wart, molluscum contagiosum, herpetic whitlow, fibrokeratoma, epidermoid cyst, squamous cell carcinoma, pyogenic granuloma, exostosis, giant cell tendon sheath tumor, glomus tumor, neurofibroma, Heberden node, and rheumatoid nodule [9].

Complications

Complications include pain, cosmetic disfigurement, and infection [7].

Prognosis

The prognosis is good as digital mucous cysts are benign lesions. However, without treatment, the lesions tend to persist [4, 6]. Nevertheless, spontaneous regression of the lesions has occasionally been reported [4, 6].

Management

Digital mucous cysts do not always require treatment. A watchful observation may be appropriate for asymptomatic patients. For symptomatic patients and those patients who prefer treatment, simple surgical excision of the cyst is the treatment of choice [6]. Extensive surgical removal of the cyst and the accompanying pedicle and osteophytes results in cure rates greater than 95% but is associated with significant morbidity [8]. Other treatment options include incision and drainage, repeated needling to induce scarification, cryotherapy, sclerotherapy, intralesional injections of corticosteroids or sclerosing agents, electrodesiccation, and carbon dioxide laser therapy [1, 4, 8].

References

1. Li K, Barankin B. Digital mucous cysts. *J Cutan Med Surg*. 2010;14:199-206.
2. Salerni G, Gonzalez R, Alonso C. Dermoscopic pattern of digital mucous cyst: report of three cases. *Dermatol Pract Concept*. 2014; 4(4):12.
3. Hyde JN. A practical treatise on diseases of the skin, for the use of students and practitioners. Philadelphia: Lea & Febiger, 1883, p423.
4. Park SE, Park EJ, Kim SS, et al. Treatment of digital mucous cysts with intralesional sodium tetradecyl sulfate injection. *Dermatol Surg*. 2014; 40:1249-1254.
5. Hur J, Kim YS, Yeo KY, et al. A case of herpetiform appearance of digital mucous cysts. *Ann Dermatol*. 2010;22(2):194-195.
6. Zuber TJ. Office management of digital mucous cyst. *Am Fam Physician*. 2001;64(12):1987-1990.
7. Hwang CY, Huang YL, Liu HN. Digital mucous cysts presenting as numerous translucent nodules in the right fifth finger. *J Chin Med Assoc*. 2011; 74(2):102-103.
8. Sung JY, Roh MR. Efficacy and safety of sclerotherapy for digital mucous cysts. *J Dermatol Treat*. 2014; 25:415-418.
9. Johnson TS, Morrow B, Compton N, et al. Mucous cysts. In: Heyman WR, Anderson BE, Hivnor C, et al, eds. *Clinical Decision Support: Dermatology*. Wilmington, Delaware: Decision Support in Medicine, LLC, electronic database. URL:<http://www.decisionsupportinmedicine.com> (Accessed on March 12, 2015)